INDEX

PAGE

Aarseth, S. J., Dynamical evolution of clusters of galaxies, II 35
Aller, L. H. and Liller, W., Changes in the planetary nebula IC 4997 337
Andrew, B. H., The spectrum of low radio frequency background radiation 79

Astrophysics:
—— The ionization structure of planetary nebulae, IV. Optical thickness of the nebulae and temperatures of the central stars, *R. J. Harman and M. J. Seaton* 15
—— The ionization structure of planetary nebulae, V. Radii, luminosities and problems of evolution, *M. J. Seaton* 113
—— Invariant imbedding and a reformulation of the internal intensity problem in radiative transfer theory, *R. E. Bellman, H. H. Kagiwada and R. E. Kalaba* 183
—— The bound–free absorption coefficient of the negative hydrogen ion, *N. A. Doughty, P. A. Fraser and R. P. McEachran* 255
—— The free–free absorption coefficient of the negative hydrogen ion, *N. A. Doughty and P. A. Fraser* 267
—— Wave propagation in rarefied plasma under the action of the Coriolis force, *J. N. Tandon and N. K. Bajaj* 285
—— Gravitational collapse in the presence of a magnetic field, *P. A. Strittmatter* 359
—— Continuous absorption by the carbon negative ion. II, Free–free absorption, *V. P. Myerscough and M. R. C. McDowell* 457
—— A note on the onset of helium burning in degenerate cores, *P. Eggleton* 479

Bajaj, N. K. and Tandon, J., Wave propagation in rarefied plasma under the action of the Coriolis force... 285
Bellman, R. E., Kagiwada, H. H. and Kalaba, R. E., Invariant imbedding and a reformulation of the internal intensity problem in radiative transfer theory 183

Celestial Mechanics and Stellar Dynamics:
—— Dynamical evolution of clusters of galaxies, II, *S. J. Aarseth* 35

Clarke, R. W. and Crowther, J. H., A pencil-beam radio telescope operating at 178 Mc/s ... 405
Crowther, J. H. and Clarke, R. W., A pencil-beam radio telescope operating at 178 Mc/s ... 405
Davidson, W., The counts of radio sources as evidence for the Doppler interpretation of the cosmological red-shift 389
Doughty, N. A. and Fraser, P. A., The free–free absorption coefficient of the negative hydrogen ion 267
Doughty, N. A., Fraser, P. A. and McEachran, R. P., The bound–free absorption coefficient of the negative hydrogen ion... 255
Eggleton, P., A note on the onset of helium burning in degenerate cores... 479
Feast, M. W., The kinematics of Me variables towards the galactic centre and a comparison with the planetary nebulae 495
Fernie, J. D., The λ4226 line as a spectrum-luminosity indicator in late-type stars 485
Fielder, G., Tests for randomness in the distribution of lunar craters 413
Fraser, P. A. and Doughty, N. A., The free–free absorption coefficient of the negative hydrogen ion 267
Fraser, P. A., Doughty, N. A. and McEachran, R. P., The bound–free absorption coefficient of the negative hydrogen ion 255
Friedjung, M., Physics of the nova phenomenon, II 143
Friedjung, M., The physics of the nova phenomenon, III 317
Friedjung, M. and Smith, M. G., A spectrophotometric examination of Herstmonceux spectra of Nova Herculis 1963 239

Galactic Nebulae:
—— Changes in the planetary nebulae IC 4997, *L. H. Aller and W. Liller* 337

Galactic Structure:
—— The kinematics of Me variables towards the galactic centre and a comparison with the planetary nebulae, *M. W. Feast* 495

Grevesse-Guillaume, C. and Wickramasinghe, N. C., On the optics of small graphite spheres, III 471
Harman, R. J. and Seaton, M. J., The ionization structure of planetary nebulae, IV. Optical thickness of the nebulae and temperatures of the central stars 15
Higgs, L. A., The γ-Cygni region of the Cygnus X radio source 67
Hutchings, J. B., Equivalent widths of Hγ in stellar spectra of the Magellanic Clouds 433

Interstellar Matter:
—— On the frequency distribution of ice grain sizes, *N. C. Wickramasinghe, W. D. Ray and C. Wyld* 137
—— On the optics of small graphite spheres, II, *K. S. Krishna Swamy and N. C. Wickramasinghe* 193
—— Interstellar polarization in the Large Magellanic Cloud, *N. Visvanathan*... 423
—— On the optics of small graphite spheres, III, *C. Grevesse-Guillaume and N. C. Wickramasinghe* 471

INDEX

PAGE

Aarseth, S. J., Dynamical evolution of clusters of galaxies, II 35
Aller, L. H. and Liller, W., Changes in the planetary nebula IC 4997 337
Andrew, B. H., The spectrum of low radio frequency background radiation 79

Astrophysics:
—— The ionization structure of planetary nebulae, IV. Optical thickness of the nebulae and temperatures of the central stars, *R. J. Harman and M. J. Seaton* 15
—— The ionization structure of planetary nebulae, V. Radii, luminosities and problems of evolution, *M. J. Seaton* 113
—— Invariant imbedding and a reformulation of the internal intensity problem in radiative transfer theory, *R. E. Bellman, H. H. Kagiwada and R. E. Kalaba* 183
—— The bound–free absorption coefficient of the negative hydrogen ion, *N. A. Doughty, P. A. Fraser and R. P. McEachran* 255
—— The free–free absorption coefficient of the negative hydrogen ion, *N. A. Doughty and P. A. Fraser* 267
—— Wave propagation in rarefied plasma under the action of the Coriolis force, *J. N. Tandon and N. K. Bajaj* 285
—— Gravitational collapse in the presence of a magnetic field, *P. A. Strittmatter* 359
—— Continuous absorption by the carbon negative ion. II, Free–free absorption, *V. P. Myerscough and M. R. C. McDowell* 457
—— A note on the onset of helium burning in degenerate cores, *P. Eggleton* 479

Bajaj, N. K. and Tandon, J., Wave propagation in rarefied plasma under the action of the Coriolis force... 285
Bellman, R. E., Kagiwada, H. H. and Kalaba, R. E., Invariant imbedding and a reformulation of the internal intensity problem in radiative transfer theory 183

Celestial Mechanics and Stellar Dynamics:
—— Dynamical evolution of clusters of galaxies, II, *S. J. Aarseth* 35

Clarke, R. W. and Crowther, J. H., A pencil-beam radio telescope operating at 178 Mc/s ... 405
Crowther, J. H. and Clarke, R. W., A pencil-beam radio telescope operating at 178 Mc/s ... 405
Davidson, W., The counts of radio sources as evidence for the Doppler interpretation of the cosmological red-shift 389
Doughty, N. A. and Fraser, P. A., The free–free absorption coefficient of the negative hydrogen ion 267
Doughty, N. A., Fraser, P. A. and McEachran, R. P., The bound–free absorption coefficient of the negative hydrogen ion... 255
Eggleton, P., A note on the onset of helium burning in degenerate cores... 479
Feast, M. W., The kinematics of Me variables towards the galactic centre and a comparison with the planetary nebulae 495
Fernie, J. D., The λ4226 line as a spectrum-luminosity indicator in late-type stars 485
Fielder, G., Tests for randomness in the distribution of lunar craters 413
Fraser, P. A. and Doughty, N. A., The free–free absorption coefficient of the negative hydrogen ion 267
Fraser, P. A., Doughty, N. A. and McEachran, R. P., The bound–free absorption coefficient of the negative hydrogen ion 255
Friedjung, M., Physics of the nova phenomenon, II 143
Friedjung, M., The physics of the nova phenomenon, III 317
Friedjung, M. and Smith, M. G., A spectrophotometric examination of Herstmonceux spectra of Nova Herculis 1963 239

Galactic Nebulae:
—— Changes in the planetary nebulae IC 4997, *L. H. Aller and W. Liller* 337

Galactic Structure:
—— The kinematics of Me variables towards the galactic centre and a comparison with the planetary nebulae, *M. W. Feast* 495

Grevesse-Guillaume, C. and Wickramasinghe, N. C., On the optics of small graphite spheres, III 471
Harman, R. J. and Seaton, M. J., The ionization structure of planetary nebulae, IV. Optical thickness of the nebulae and temperatures of the central stars 15
Higgs, L. A., The γ-Cygni region of the Cygnus X radio source 67
Hutchings, J. B., Equivalent widths of Hγ in stellar spectra of the Magellanic Clouds 433

Interstellar Matter:
—— On the frequency distribution of ice grain sizes, *N. C. Wickramasinghe, W. D. Ray and C. Wyld* 137
—— On the optics of small graphite spheres, II, *K. S. Krishna Swamy and N. C. Wickramasinghe* 193
—— Interstellar polarization in the Large Magellanic Cloud, *N. Visvanathan*... 423
—— On the optics of small graphite spheres, III, *C. Grevesse-Guillaume and N. C. Wickramasinghe* 471

PAGE

Jordan, Carole, The relative abundance of silicon, iron and nickel in the solar corona 463
Jordan, Carole, The abundance of iron in the solar corona 515
Kagiwada, H. H., Bellman, R. E. and Kalaba, R. E., Invariant imbedding and a reformulation of the internal intensity problem in radiative transfer theory 183
Kaiser, T. R., Poole, L. M. G. and Webster, A. R., Radio-echo observations of the major night-time meteor streams 225
Kalaba, R. E., Bellman, R. E. and Kagiwada, H. H., Invariant imbedding and a reformulation of the internal intensity problem in radiative transfer theory 183
Krishna Swamy, K. A. and Wickramasinghe, N. C., On the optics of small graphite spheres, II 193
Liller, W. and Aller, L. H., Changes in the planetary nebula IC 4997 337
McDowell, M. R. C. and Myerscough, V. P., Continuous absorption by the carbon negative ion. II, Free–free absorption 457
McEachran, R. P., Doughty, N. A. and Fraser, P. A., The bound–free absorption coefficient of the negative hydrogen ion 255

Meteors:
—— Radio-echo observations of the major night-time meteor streams, *T. R. Kaiser, L. M. G. Poole and A. R. Webster* 225

Monaghan, J. J., Magnetic fields in stellar bodies, II. Magnetic fields in upper main sequence stars 1
Monaghan, J. J., The structure of rapidly rotating white dwarfs 305

Moon:
—— Tests for randomness in the distribution of lunar craters, *G. Fielder* 413

Mugglestone, D. and O'Mara, B. J., The influence of Stark broadening on abundance determinations 87
Myerscough, V. P. and McDowell, M. R. C., Continuous absorption by the carbon negative ion. II, Free–free absorption 457
O'Mara, B. J. and Mugglestone, D., The influence of Stark broadening on abundance determinations 87
Poole, L. M. G., Kaiser, T. R. and Webster, A. R., Radio-echo observations of the major night-time meteor streams 225

Radio Astronomy:
—— The γ-Cygni region of the Cygnus X radio source, *L. A. Higgs* 67
—— The spectrum of low radio frequency background radiation, *B. H. Andrew* 79
—— A pencil-beam radio telescope operating at 178 Mc/s, *J. H. Crowther and R. W. Clarke* 405

Ray, W. D., Wickramasinghe, N. C. and Wyld, C., On the frequency distribution of ice grain sizes 137
Refsdal, S., On the possibility of testing cosmological theories from the gravitational lens effect 101
Refsdal, S. and Stabell, R., Classification of general relativistic world models 119
Roxburgh, I. W., On stellar rotation, II. Thermally generated magnetic fields 331
Roxburgh, I. W., Magnetostatic equilibrium of polytropes 207
Seaton, M. J., The ionization structure of planetary nebulae, V. Radii, luminosities and problems of evolution 347
Seaton, M. J. and Harman, R. J., The ionization structure of planetary nebulae, IV. Optical thickness of the nebulae and temperatures of the central stars 15
Sher, D., On the construction of an isotropic distribution of velocities for model clusters ... 527
Smith, M. G. and Friedjung, M. A spectrophotometric examination of Herstmonceux spectra of Nova Herculis 1963 239

Solar Systems:
—— Rotating solar polytropes and the perihelion advance of the planet Mercury, *I. M. Winer* 401

Stabell, R. and Refsdal, S., Classification of general relativistic world models 379

Stars, Spectra of:
—— The influence of Stark broadening on abundance determinations, *D. Mugglestone and B. J. O'Mara* 87
—— Physics of the nova phenomenon, II, *M. Friedjung* 143
—— A spectrophotometric examination of Herstmonceux spectra of Nova Herculis 1963, *M. Friedjung and M. G. Smith* 239
—— The physics of the nova phenomenon, III, *M. Friedjung* 317
—— Equivalent widths of Hγ in stellar spectra of the Magellanic Clouds, *J. B. Hutchings* ... 433
—— Negative chlorine ion and M-spectral type stars, *M. S. Vardya* 475
—— The λ 4226 line as a spectrum-luminosity indicator in late-type stars, *J. D. Fernie* ... 485

Stars, Structure and Evolution of:
—— Magnetic fields in stellar bodies, II. Magnetic fields in upper main sequence stars, *J. J. Monaghan* 1
—— On stellar rotation, III. Thermally generated magnetic fields, *I. W. Roxburgh* 201
—— The structure of rapidly rotating white dwarfs, *J. J. Monaghan* 305
—— Magnetostatic equilibrium of polytropes, *I. W. Roxburgh* 347

Stellar Dynamics:
—— On the construction of an isotropic distribution of velocities for model clusters, *D. Sher* ... 527

Stothers, R., Quasars as the origin of primordial matter in a steady-state universe 217
Strittmatter, P. A., Gravitational collapse in the presence of a magnetic field 359

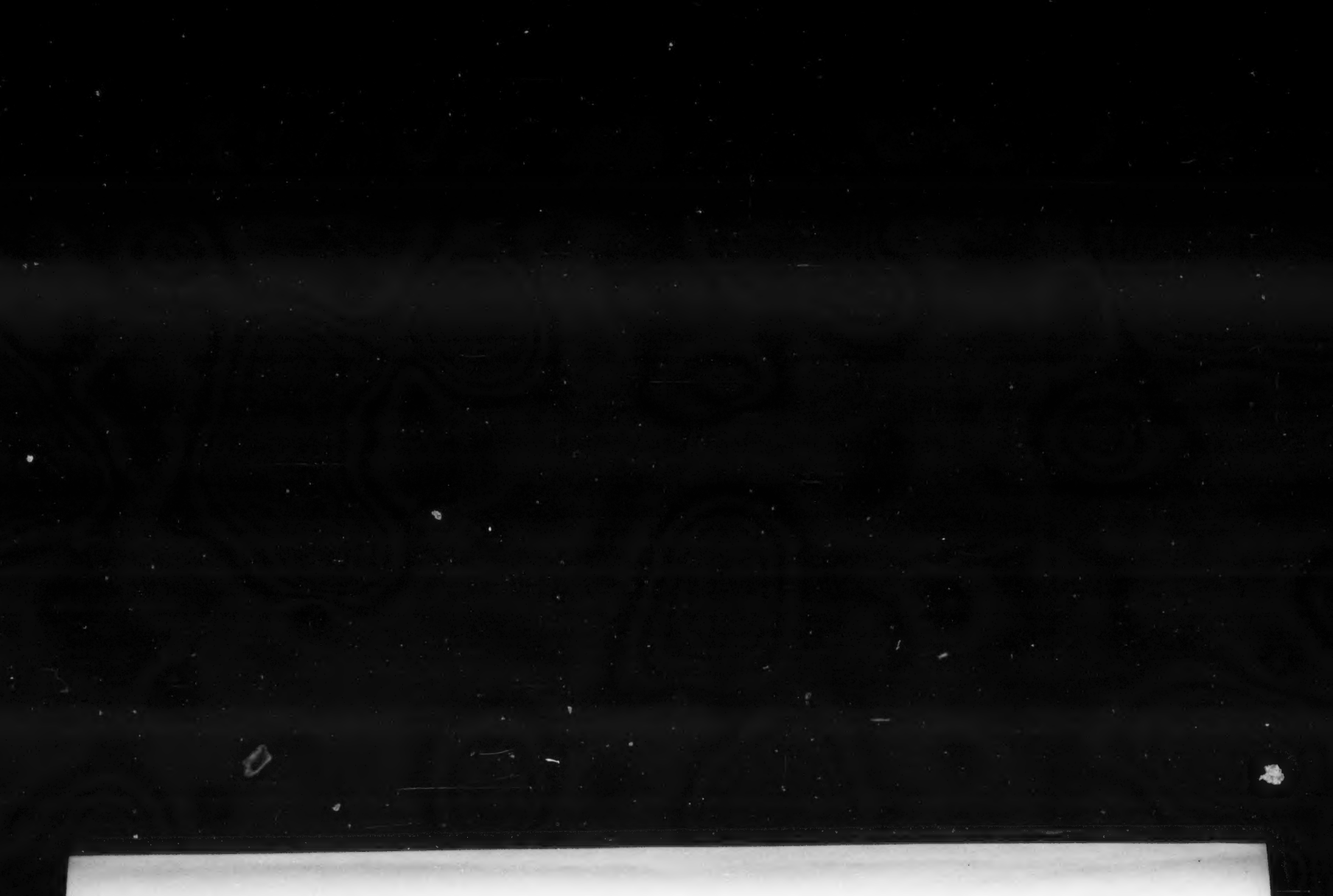
Sun:
—— The relative abundance of silicon, iron and nickel in the solar corona, *Carole Jordan* ... 463
—— The abundance of iron in the solar corona, *Carole Jordan* 515

Tandon, J. N. and Bajaj, N. K., Wave propagation in rarefied plasma under the action of the Coriolis force 285

Universe–Cosmology:
—— On the possibility of testing cosmological theories from the gravitational lens effect, *S. Refsdal* 101
—— Quasars as the origin of primordial matter in a steady-state universe, *R. Stothers* 217
—— Classification of general relativistic world models, *R. Stabell and S. Refsdal* 379
—— The counts of radio sources as evidence for the Doppler interpretation of the cosmological red-shift, *W. Davidson* 389

Vardya, M. S., Negative chlorine ion and M-spectral type stars 475
Visvanathan, N., Interstellar polarization in the Large Magellanic Cloud 423
Wickramasinghe, N. C. and Grevesse-Guillaume, C., On the optics of small graphite spheres, III 471
Wickramasinghe, N. C. and Krishna Swamy, K. S., On the optics of small graphite spheres, II 193
Wickramasinghe, N. C., Ray, W. D. and Wyld, C., On the frequency distribution of ice grain sizes 137
Winer, I. M., Rotating solar polytropes and the perihelion advance of the planet Mercury ... 401
Wyld, C., Wickramasinghe, N. C. and Ray, W. D., On the frequency distribution of ice grain sizes 137

Printed in England
TAYLOR & FRANCIS, LTD., Red Lion Court, Fleet Street, London, E.C.4



INDEX

PAGE

Abhyankar, K. D. and Sarma, M. B. K., A study of the spectroscopic binary ζ CrB A ... 437
Allen, C. W., Statistical spectroscopy 21
Argue, A. N., *UBV* photometry of 550 F, G and K type stars 475

Astrophysics :
—— The influence of a magnetic field on Schwarzschild's criterion for convective instability in an ideally conducting fluid, *D. O. Gough and R. J. Tayler* 85
—— Lifetime of binary stars, *Shin Yabushita* 133
—— Pressure dissociation and high density adiabats, *M. S. Vardya* 145
—— The electron and positron energy distribution from proton–antiproton annihilation at rest, *B. Renner* 197
—— The magnetic field of a contracting gas cloud. I, Strict flux-freezing, *L. Mestel* ... 265
—— The limiting behaviour of the absorption cross sections of the negative hydrogen ion, *T. L. John* 447

Barber, D., The polarization, periodicity and angular diameter of the radiation from Jupiter at 610 Mc/s 285
Bastin, J. A., Clegg, P. E. and Gear, A. E., Heat transfer in lunar rock 63
Bullen, K. E., On the constitution of Mars, III 229
Burn, B. J., On the depolarization of discrete radio sources by Faraday dispersion 67

Celestial Mechanics and Stellar Dynamics :
—— Augmented lunar tide heights in barycentric motion, *I. Michelson* 17

Clegg, P. E., Bastin, J. A. and Gear, A. E., Heat transfer in lunar rock 63
Davies, R. D., Gottesman, S. T. and Reddish, V. C., A neutral hydrogen survey of the southern regions of the Andromeda nebula 359
Gear, A. E., Clegg, P. E. and Bastin, J. A., Heat transfer in lunar rock 63
Gottesman, S. T., Reddish, V. C. and Davies, R. D., A neutral hydrogen survey of the southern regions of the Andromeda nebula 359
Gower, J. F. R., The source counts from the 4C survey 151
Goyal, A. N., Double stars (list IV) in the astrographic zones +32° and +33° 15
Hill, P. W. and Hill, S. R., Faint blue stars in the far southern hemisphere 205
Hill, S. R. and Hill, P. W., Faint blue stars in the far southern hemisphere 205
Holden, D. J., An investigation of the clustering of radio sources 225
Hornby, J. M., The structure of the magnetic field in the local spiral arm 213
Hunter, J. H., Jr., Galaxy formation in a steady state universe 181
Hunter, J. H., Jr., The role of thermal instabilities in star formation 239
John, T. L., The limiting behaviour of the absorption cross sections of the negative hydrogen ion 447
Jones, J. and Kaiser, T. R., The effects of thermal radiation, conduction and meteoroid heat capacity on meteoric ablation 411
Kaiser, T. R., Webster, A. R. and Poole, L. M. G., Radio-echo observations of the major night-time meteor streams. II, Geminids 309
Kaiser, T. R. and Jones, J., The effects of thermal radiation, conduction and meteoroid heat capacity on meteoric ablation 411
Longair, M. S., On the interpretation of radio source counts 421
Mestel, L., The magnetic field of a contracting gas cloud. I, Strict flux-freezing 265

Meteors :
—— Radio-echo observations of the major night-time meteor streams. II, Geminids, *A. R. Webster, T. R. Kaiser and L. M. G. Poole* 309
—— The effects of thermal radiation, conduction and meteoroid heat capacity on meteoric ablation, *J. Jones and T. R. Kaiser*... 411

Michelson, I., Augmented lunar tide heights in barycentric motion 17

Moon :
—— Heat transfer in lunar rock, *P. E. Clegg, J. A. Bastin and A. E. Gear* 63

Piddington, J. H., Galactic explosions, radio galaxies and quasi-stellar sources 163

Planets :
—— On the constitution of Mars. III, *K. E. Bullen* 229
—— Stability analysis of Saturn's rings with differential rotation, *Shin Yabushita* 247

Poole, M. G., Webster, A. R. and Kaiser, T. R., Radio-echo observations of the major night-time meteor streams. III, Geminids 309
Price, M. J., Narrow band photoelectric Hα photometry in late-type stars 449
Purton, C. R., The spectrum of the galactic radio emission 463

PAGE

Radio Astronomy :
—— On the depolarization of discrete radio sources by Faraday dispersion, *B. J. Burn* ... 67
—— The source counts from the 4C survey, *J. F. R. Gower* 151
—— Galactic explosions, radio galaxies and quasi-stellar sources, *J. H. Piddington* 163
—— An investigation of the clustering of radio sources, *D. J. Holden*... 225
—— The polarization, periodicity and angular diameter of the radiation from Jupiter at 610 Mc/s, *D. Barber* 285
—— A neutral hydrogen survey of the southern regions of the Andromeda nebula, *S. T. Gottesman, R. D. Davies and V. C. Reddish* 359
—— The spectrum of the galactic radio emission, *C. R. Purton* 463

Reddish, V. C., Gottesman, S. T. and Davies, R. B., A neutral hydrogen survey of the southern regions of the Andromeda nebula 359
Renner, B., The electron and positron energy distribution from proton–antiproton annihilation at rest 197
Roxburgh, I. W. and Strittmatter, P. A., On stellar rotation. IV, Thermally generated magnetic fields limited by the Hall field 1
Roxburgh, I. W. and Strittmatter, P. A., On stellar rotation. V, The structure of rotating stars 345
Rubin, R., The effect of stellar rotation on apparent bolometric luminosity 339
Sarma, M. B. K. and Abhyankar, K. D., A study of the spectroscopic binary ζ CrB A ... 437
Scarfe, C. D., Photoelectric observations of Fe I lines in late-type stellar spectra 99
Solheim, J.-E., Relativistic world models and redshift-magnitude observations 321

Stars, Clusters and Groups of :
—— Double stars (list IV) in the astrographic zones +32° and +33°, *A. N. Goyal* ... 15

Stars, Spectra of :
—— Statistical spectroscopy, *C. W. Allen* 21
—— Photoelectric observations of Fe I lines in late-type stellar spectra, *C. D. Scarfe* ... 99
—— Faint blue stars in the far southern hemisphere, *P. W. Hill and S. R. Hill* 205
—— Abundances of the iron group elements in the atmosphere of Sirius, *B. Warner* ... 389
—— A study of the spectroscopic binary ζ CrB A, *K. D. Abhyankar and M. B. K. Sarma* ... 437
—— Narrow band photoelectric Hα photometry in late-type stars, *M. J. Price* 449
—— *UBV* photometry of 550 F, G and K type stars, *A. N. Argue* 475

Stars, Structure and Evolution of :
—— On stellar rotation. IV, Thermally generated magnetic fields limited by the Hall field, *I. W. Roxburgh and P. A. Strittmatter* 1
—— The role of thermal instabilities in star formation, *J. H. Hunter, Jr.* 239
—— The effect of stellar rotation on apparent bolometric luminosity, *R. Rubin* 339
—— On stellar rotation. V, The structure of rotating stars, *I. W. Roxburgh and P. A. Strittmatter* 345
—— The physical conditions and velocity distribution in the envelope of RR Telescopii, *M. Friedjung* 401

Strittmatter, P. A. and Roxburgh, I. W., On stellar rotation. IV, Thermally generated magnetic fields limited by the Hall field 1
Strittmatter, P. A. and Roxburgh, I. W., On stellar rotation. V, The structure of rotating stars 345

Universe—Cosmology :
—— Galaxy formation in a steady state universe, *J. H. Hunter, Jr.* 181
—— Relativistic world models and redshift-magnitude observations, *J.-E. Solheim* 321
—— On the interpretation of radio source counts, *M. S. Longair* 421

Vardya, M. S., Pressure dissociation and high density adiabats 145
Warner, B., Abundances of the iron group elements in the atmosphere of Sirius 389
Webster, A. R., Kaiser, T. R. and Poole, L. M. G., Radio-echo observations of the major night-time meteor streams. II, Geminids 309
Yabushita, Shin, Lifetime of binary stars 133
Yabushita, Shin, Stability analysis of Saturn's rings with differential rotation 247

Printed in England
TAYLOR & FRANCIS, LTD, Red Lion Court, Fleet Street, London, E.C.4

INDEX

PAGE

The following papers were inadvertently omitted from the Index to Volume 133:

Freeman, K. C., Structure and evolution of barred spiral galaxies, I 47
Friedjung, M., The physical conditions and velocity distribution in the envelope of RR Telescopii 401
Gough, D. O. and Tayler, R. J., The influence of a magnetic field on Schwarzschild's criterion for convective instability in an ideally conducting fluid 85

Astrophysics :
—— On magnetic fields and gas streaming in spiral galaxies, *K. C. Freeman and L. Mestel* ... 37
—— Pressure dissociation and the hydrogen molecular ion, *M. S. Vardya* 183
—— Magnetic fields in stellar bodies. III. Distortion of polytropes, *J. J. Monaghan* ... 275
—— Transition probabilities from solid vortex arcs, *B. Woodgate* 287
—— The Voigt function: An eight-significant-figure table and generating procedure (Summary), *D. G. Hummer* 418
—— Contact binaries, II (Summary), *O. J. Eggen* 419
—— Absolute oscillator strengths for once-ionized elements of the iron group (Summary), *B. Warner* 420
Baldwin, J. E., Williams, P. J. S. and Kenderdine, S., A survey of radio sources and background radiation at 38 Mc/s (Summary) 419
Bingham, R. G., Linear polarization of galactic radio emission at 1407 Mc/s 327

Celestial mechanics and stellar dynamics :
—— Structure and evolution of barred spiral galaxies, II, *K. C. Freeman* 1
—— Structure and evolution of barred spiral galaxies, III, *K. C. Freeman* 15
—— Exact solutions in the theory of orbits, *A. H. Cook* 253
Chiarella, C. and Reichel, A., On the evaluation of Voigt spectral line functions 83
Cook, A. H., Exact solutions in the theory of orbits 253
Cross, C. A., The size distribution of lunar craters 245
Dharmawardhana, M. W. C., Wickramasinghe, N. C. and Wyld, C., Light scattering by graphite core-ice mantle grains 25
Davidson, W. and Davies, M., On the hypothesis of galactic collisions as an explanation of the counts of radio sources 405
Davies, M. and Davidson, W., On the hypothesis of galactic collisions as an explanation of the counts of radio sources 405
Eggen, O. J., Contact binaries, II (Summary) 419
Elsmore, B., Kenderdine, S. and Ryle, Sir Martin, The operation of the Cambridge one-mile radio telescope 87
Feast, M. W., Lithium in β Hydri and other stars 321
Flynn, F. H., The effect of non-uniform illumination of interferometric measurements of Doppler shifts in the spectrum of diffuse sources 53
Freeman, K. C., Structure and evolution of barred spiral galaxies, II 1
Freeman, K. C., Structure and evolution of barred spiral galaxies, III 15
Freeman, K. C. and Mestel, L., On magnetic fields and gas streaming in spiral galaxies ... 37

Galactic structure :
—— Models of the galactic magnetic field, *P. A. H. Seymour* 389
Gascoigne, S. C. B., Colour magnitude diagrams for nine globular-like clusters in the Magellanic Clouds 59
Grzędzielski, S., On the possibility of fragmentation of a pre-galaxy with large internal velocity differences 109
Hewish, A. and Little, L. T., Interplanetary scintillation and its relation to the angular structure of radio sources 221
Hummer, D. G., The Voigt function. An eight-significant-figure table and generating procedure (Summary) 418

Instruments :
—— The effect of non-uniform illumination on interferometric measurements of Doppler shifts in the spectrum of diffuse sources, *F. H. Flynn* 53

Interstellar matter :
—— Light scattering by graphite core-ice mantle grains, *N. C. Wickramasinghe, M. W. C. Dharmawardhana and C. Wyld* 25
Kenderdine, S.. Elsmore, B. and Ryle, Sir Martin, The operation of the Cambridge one-mile radio telescope 87
Kenderdine, S., Ryle, Sir Martin and Pooley, G. G., Some observations of weak radio sources with the Cambridge one-mile telescope 189
Kenderdine, S., Baldwin, J. E. and Williams, P. J. S., A survey of radio sources and background radiation at 38 Mc/s (Summary) 419
Large, M. I. and Quigley, M. J. S., A radio study of the North Polar Spur. III. A catalogue of discrete sources 239

PAGE

Little, L. T., and Hewish, A., Interplanetary scintillation and its relation to the angular structure of radio sources 221
Long, R. J., Smith, M. A., Stewart, P. and Williams, P. J. S., The radio spectra of sources in the fourth Cambridge catalogue 371
Marcus, A., Comments on ' Distribution of craters on the lunar surface ' 269
McIntosh, C. B. G., C-field cosmological models 211
Mestel, L. and Freeman, K. C., On magnetic fields and gas streaming in spiral galaxies ... 37
Monaghan, J. J., Magnetic fields in stellar bodies. III. Distortion of polytropes 275

Moon :
—— The size distribution of lunar craters, *C. A. Cross* 245
—— Comments on ' Distribution of craters on the lunar surface ', *A. Marcus* 269
Pooley, G. G., Kenderdine, S. and Ryle, Sir Martin, Some observations of weak radio sources with the Cambridge one-mile telescope 189
Price, M. J., Narrow band photometry in the study of stellar populations. I. The sodium D lines in late-type stars 135
Price, M. J., Narrow band photometry in the study of stellar populations. II. Comparison of the Hyades and Coma Berenices open clusters 171
Quigley, M. J. S. and Large, M. I., A radio study of the North Polar Spur. III. A catalogue of discrete sources 239

Radio astronomy :
—— The operation of the Cambridge one-mile radio telescope, *B. Elsmore, S. Kenderdine and Sir Martin Ryle* 87
—— Some observations of weak radio sources with the Cambridge one-mile telescope, *S. Kenderdine, Sir Martin Ryle and G. G. Pooley* 189
—— Interplanetary scintillation and its relation to the angular structure of radio sources, *L. T. Little and A. Hewish* 221
—— A radio study of the North Polar Spur. III. A catalogue of discrete sources, *M. J. S. Quigley and M. I. Large* 239
—— Linear polarization of the galactic radio emission at 1407 Mc/s, *R. G. Bingham* ... 327
—— The radio spectra of sources in the fourth Cambridge catalogue, *R. J. Long, M. A. Smith, P. Stewart and P. J. S. Williams* 371
—— A survey of radio sources and background radiation at 38 Mc/s (Summary), *P. J. S. Williams, S. Kenderdine and J. E. Baldwin* 419
Refsdal, S., On the possibility of determining the distances and masses of stars from the gravitational lens effect 315
Reichel, A. and Chiarella, C., On the evaluation of Voigt spectral line functions 83
Ryle, Sir Martin, Elsmore, B. and Kenderdine, S., The operation of the Cambridge one-mile radio telescope 87
Ryle, Sir Martin, Kenderdine, S. and Pooley, G. G., Some observations of weak radio sources with the Cambridge one-mile telescope 189
Seymour, P. A. H., Models of the galactic magnetic field 389
Smith, M. A., Long, R. J., Stewart, P. and Williams, P. J. S., The radio spectra of sources in the fourth Cambridge catalogue 371

Stars, binary :
—— Orbits of two double-lined spectroscopic binaries, HD 147971 and 75759, *A. D. Thackeray* 97

Stars, clusters and groups of :
—— Colour–magnitude diagrams for nine globular-like clusters in the Magellanic Clouds, *S. C. B. Gascoigne* 59

Stars, motions of :
—— Radial velocities of southern B stars determined at the Radcliffe Observatory, IV. The Sco-Cen association (Summary), *A. D. Thackeray* 418

Stars, spectra of :
—— On the evaluation of Voigt spectral line functions, *C. Chiarella and A. Reichel* ... 83
—— Narrow band photometry in the study of stellar populations. I. The sodium D lines in late-type stars, *M. J. Price* 135
—— Narrow band photometry in the study of stellar populations. II. Comparison of the Hyades and Coma Berenices open clusters, *M. J. Price* 171

Stars, structure and evolution of :
—— Lithium in β Hydri and other stars, *M. W. Feast* 321
—— March with depth of molecular abundances in the outer layers of K and M stars, *M. S. Vardya* 347

PAGE

Stewart, P., Long, R. J., Smith, M. A. and Williams, P. J. S., The radio spectra of sources in the fourth Cambridge catalogue 371
Thackeray, A. D., Orbits of two double-lined spectroscopic binaries, HD 147971 and 75759 97
Thackeray, A. D., Radial velocities of southern B stars determined at the Radcliffe Observatory. IV. The Sco-Cen Association (Summary) 418

Universe—Cosmology :
—— On the possibility of fragmentation of a pre-galaxy with large internal velocity differences, *S. Grzędzielski* 109
—— *C*-field cosmological models, *C. B. G. McIntosh* 211
—— On the possibility of determining the distances and masses of stars from the gravitational lens effect, *S. Refsdal* 315
—— On the gypothesis of galactic collisions as an explanation of the counts of radio sources, *W. Davidson and M. Davies* 405
Vardya, M. S., Pressure dissociation and the hydrogen molecular ion 183
Vardya, M. S., March with depth of molecular abundances in the outer layers of K and M stars 347
Warner, B., Absolute oscillator strengths for once-ionized elements of the iron group (Summary) 420
Wickramasinghe, N. C., Dharmawardhana, M. W. C. and Wyld, C., Light scattering by graphite core-ice mantle grains 25
Williams, P. J. S., Long, R. J., Smith, M. A. and Stewart, P., The radio spectra of sources in the fourth Cambridge catalogue 371
Williams, P. J. S., Kenderdine, S. and Baldwin, J. E., A survey of radio sources and background radiations at 38 Mc/s (Summary) 419
Woodgate, B., Transition probabilities from solid vortex arcs 287
Wyld, C., Wickramasinghe, N. C. and Dharmawardhana, M. W. C., Light scattering by graphite core-ice mantle grains 25

Printed in England
TAYLOR & FRANCIS, LTD, Red Lion Court, Fleet Street, London, E.C.4